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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/483,110	01/14/2000	Faisal Haq	M-7998-US	7946

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CAMPBELL STEPHENSON ASCOLESE, LLP
4807 SPICEWOOD SPRINGS RD.
BLDG. 4, SUITE 201
AUSTIN, TX 78759

EXAMINER	
DUONG, FRANK	

ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/483,110	HAQ ET AL.	
	Examiner	Art Unit	
	Frank Duong	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,16-20 and 31-41* is/are rejected.

7)☒ Claim(s) *6-15,21-30 and 42-51* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is a response to communications dated 12/03/04. Claims 1-51 are pending in the application.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/03/04 has been entered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 16-20 and 31-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilford.

Regarding **claims 1, 16 and 35**, in accordance with Wilford reference entirety, Wilford discloses a method/system/program product comprising:

step/means for receiving at least one packet (Fig. 2; element 201 and col. 10, lines 64-65); and

step/means for disposing of the receiving at least one packet in response to a walk (parse) of a Balance Hash Table of Access control List Binary Comparison Trees (tree memory 308), the Table (tree memory 308) encoding an Access Control List (Fig. 2; element 206 and col. 16, lines 37-49).

Regarding **claims 2, 17 and 38**, in addition to features recited in base claims 1, 16 and 35 (see rationales discussed above), Wilford further discloses (Fig. 8 and col. 16, line 53 and thereinafter step/means for constructing a hash table index value from one or more bit positions, within the received at least one packet, pointed at by one or more pointers of a Has-Table-Balancing Bit Selection Vector (*Fig. 8; element 802 and col. 16, line 53 to col.17, line 50*); and step/means for walking a binary comparison tree associated with the constructed hash table index value (*col. 6, lines 28-39 and col. 17, lines 45-50 and thereinafter.*)

Regarding **claims 3, 18 and 39**, in addition to features recited in base claims 2, 17 and 38 (see rationales discussed above), Wilford further discloses step/means for converting the Access Control List to the Balanced Hash Table of Access Control List Binary Comparison Tree, the Table encoding the Access Control List (see Fig. 7C and col. 16, lines 46-49).

Regarding **claims 4, 19 and 40**, in addition to features recited in base claims 3, 18 and 39 (see rationales discussed above), Wilford further discloses step/means for

creating a binary comparison tree for at least one Access Control List Rule (Permission) in the Access Control List (see Fig. 7c and col. 17, line 25-49).

Regarding **claims 5, 20 and 41**, in addition to features recited in base claims 4, 19 and 40 (see rationales discussed above), Wilford further discloses step/means for creating at least one node, having at least one miss branch and at least one match branch, for at least one packet header field utilized by the at least one Access Control List Rule in the Access Control List (see Figs. 7C-8 and col. 19, lines 1-12).

Regarding **claims 31-34 and 36-37**, in addition to features recited in base claims 16 and 35 (see rationales discussed above), Wilford further discloses the system of Fig. 2 is a computer based system having memory (Fig. 2; element 203) corresponding to recordable media and network interface (Fig. 2; element 201) corresponding to transmission media.

Allowable Subject Matter

5. Claims 6-15, 21-30 and 42-50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: same reasons stated in the Office Action dated 7/27/04.

Response to Arguments

7. Applicant's arguments filed 12/03/04 have been fully considered but they are not persuasive. Applicants' arguments will be addressed hereinbelow in the order in which they appear in the response filed 12/03/04.

In the Remarks of the outstanding response, on page 13, pertaining the rejection of claims 1-5, 16-20 and 31-34 under 35 U.S.C. § 102(b) as being anticipated by Wilford, Applicants assert "*the terms in the phrase "Balanced Hash Table of Access Control List Binary Comparison Trees" are clearly defined as they appear in claim 1. This phrase describes a "hash table" that is "balanced." As noted on p. 8 of the specification, "balanced" means that the trees are "distributed roughly evenly both in depth and across the entries of the entire hash table." This "balanced hash table" has entries "binary comparison trees" that encode an "access control list." As noted below ... suggest claim 1*".

In response Examiner respectfully disagrees and acknowledges Applicants are their own lexicographers. Applicants can coin a "term" in the claims to means whatsoever. However, claim language is given broadest reasonable interpretation in consisting with the specification. Claim 1, in the present condition, merely calls for limitation of a method comprising receiving a packet and disposing of the received at least one packet in response to a walk of a Balanced Hash Table of Access Control List Binary Comparison Trees, the table encoding an Access Control List. The disputed term "*Balanced Hash Table of Access Control List Binary Comparison Trees, the table encoding an Access Control List* " is corresponding to "*a tree memory 308*" having

routing tables or access control list converted (encoded) and stored in it for using in routing determination of a received packet. Let's visit Wilford reference. At col. 16, lines 26-49, in reference to Fig. 7C, Wilford shows an access control list and discloses access control list may be converted by the high-level processor 208 from the high-level memory 209 into the tree memory 308 like routing tables. Moreover, in accordance with Fig. 8 and the description at col. 16, line 54 and therein after, Wilford shows a block diagram of data structures used in a tree program generator converting information from a routing table 802 in high-level memory 209 into function subsections ("subtrees") 803 in the tree memory 308, each of which may parse and recognize a portion of each packet 106. Parsing a received packet against an access control list is not new or novel. Most of routers or firewalls hardware or software do it. Wilford, as clearly pointed out in the Office Action and above, discloses just that. Contradistinction to the Applicants' argument, there is neither specific definition for the disputed term "*Balanced Hash Table of Access Control List Binary Comparison Trees*" in claim 1 nor in the recited p. 8 of the specification to distinguish the claimed limitation from that disclosed by prior art of Wilford. Thus, Examiner asserts Wilford does indeed disclose the claimed invention of claim 1.

Also in the Remarks of the outstanding response, on page 14, last paragraph continues to page 15, second paragraph, Applicants argue "*In the rejection of claim 1, the tree memory ... Neither the term "balanced" nor the term "hash table" appear anywhere within Wilford. Accordingly, the cited art clearly fails to anticipate, teach, or suggest each and every element of claim ... cited art for similar reasons.*"

In response Examiner again respectfully disagrees and asserts the disputed terms are implicitly and inherently disclosed by Wilford. The "*weighted tree representation 804*" disclosed at col. 17 and thereinafter corresponding to the disputed term "*balanced*" and the access control list depicted in Fig. 7C and disclosed at col. 16, line 26 and thereinafter and routing table converting into subtrees in the tree memory corresponding to the disputed term "*hash table*". In examining the claimed invention Examiner does indeed strictly follow the guideline in MPEP. Any claimed limitation without specific definition either in the claim or in the specification will be given broadest reasonable interpretation in consisting with the disclosure.

Also on page 15, last paragraph of the response continues to first paragraph of page 16, pertaining the rejection of claim 2, Applicants allege the Wilford reference fails to teach the limitation of "*constructing a hash table index value from one or more bit positions, within the received at least one packet, pointed at by one or more pointers of a Hash-Table-Balancing Bit Selection Vector ... foregoing reasons*".

In response Examiner respectfully and asserts, in the present condition, Wilford reference as clearly pointed out in the Office Action does anticipate the claimed limitation. Fig. 8 and the description at col. 16, line 54 and thereinafter, Wilford discloses routing table 802 is converted by tree program generator 801 using weighted tree representation 804 into subtrees 803-805. Each of the subtrees may parse and recognize a portion of each packet 106. At col. 6, lines 28-39, Wilford further discloses control values 311 in tree memory 308 comprising a next address 312 for the tree memory 308, a next data value 313 for comparison, and an instruction 314. Thus,

contradistinction to the Applicants' allegation, Wilford, in so many words, does disclose the limitation of "*constructing a hash table index value from one or more bit positions, within the received at least one packet, pointed at by one or more pointers of a Hash-Table-Balancing Bit Selection Vector*".

Examiner believes an earnest attempt has been made in addressing all of the Applicants' arguments.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gai et al (USP 6,651,096).

Ashar et al (USP 5,748,486).

Okuzawa et al (USP 5,243,538).

Held, Working with Cisco Access Lists, International Journal of Network Management, pages 151-154, 1999.

Hazelhurst et al, Binary Decision Diagram Representation of Firewall and Router Access Lists, CiteSeer, pages 1-11, 1998.

Bryant, Symbolic Boolean Manipulation with Ordered Binary Decision Diagrams, CiteSeer, pages 1-34, 1992.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is 571-272-3164. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frank Duong
Primary Examiner
Art Unit 2666

March 3, 2005